

**COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION**

Bureau of Design
Harrisburg, PA 17101
December 21, 2001

U.S. Department of Transportation
Dockets Management Facility
Room PL-401
400 Seventh Street, SW
Washington, DC 20590

Subject: Federal Register FHWA Docket Numbers:
2001-8954 National Bridge Inspection Standards
2001-9182 Highway Bridge Replacement and
Rehabilitation Program

Dear Sir:

We offer the following comments in response to the subject
Docket Numbers:

1. NBI Appraisal Ratings and Design Exceptions

- Revise the appraisal items rating standards to ensure agreement with the AASHTO design criteria for the route served. For example, AASHTO Exception Design for Low Volume Roads is a more appropriate standard for many of our bridges.
- Stop the use of the FHWA Edit/Update program to automatically calculate the Appraisal Ratings from inventory/condition information for NBI Item 67 Structural Condition, Item 68 Deck Geometry, Item 69 Underclearance, Item 71 Waterway Adequacy, and Item 72 Approach Roadway Alignment. Require the inspector to rate these items based upon actual site conditions and applicable design standards.
- The primary reasoning for site-rating these items is that Edit/Update program does not account for Design Exceptions that were granted for specific sites. If a Design Exception was granted, the Appraisal Rating should at least a "6", indicating a "condition equal to present minimum criteria". By recognizing Design Exceptions in appraisal ratings, those bridges would be removed from the functionally obsolete list.

- Require Design Exceptions to be recorded in the NBI. A new NBI item would be needed.

2. HBRRP Funding

- Provide flexibility to use HBRRP funds for maintenance and preservation work and not just rehabilitation and replacement. This flexibility could be predicated on the use of a Bridge Management System.
- Maximize available funding to the states and allow the greatest amount of flexibility to use these funds based upon demonstrated needs and mitigation plans.

3. Element Inspection / Component Rating and Reporting Requirements

- Require inspection of bridges at an element level, but rating the condition and reporting to the NBI only at the major component level (Deck, Superstructure, Substructure, and Culvert).
- Allow flexibility to the States to develop alternatives to CoRE inspection and Pontis.

4. Qualification of Inspection Personnel

- **Team size:** Require a minimum of 2 persons in each inspection team. Only the team leader would have to be certified.
- **FCM Inspections** Require that the inspection team leader for the inspection of Fracture Critical Members be a Professional Engineer (PE).
- **Refresher Course for Bridge Safety Inspectors** Establish formal requirements for a 2-day minimum Bridge Safety Inspection Refresher Course (similar to PENNDOT's training program). Require all inspectors and individuals in charge of the inspection unit, including PEs, to attend this Refresher Course to maintain certification.

5. Quality Assurance and Quality Control Efforts

- Require formal independent QA inspections to verify accuracy and consistency of condition and appraisal data in NBI.
- Only 2 states (PA and WA) have such programs now.

6. Inspection of Non-Highway Bridges over Public Roads

- Add requirements for the safety inspection of the structural components of these bridges to the NBIS.

- Add requirements for reporting these bridges to the State DOT.
- Provide funding for these inspections.

7. Inspection of Other Highway-Related Structures

- Consider adding inspection requirements for other highway related structures, including bridges/culverts < 20' long, noisewalls, retaining walls and sign structures.
- Provide funding for these inspections.

8. Bridge Management System

- A Bridge Management System can be based on component level condition information.
- A Bridge Management System should have the ability to analyze various funding scenarios of maintenance, preservation and reconstruction activities to optimize bridge performance.
- Reward the States that utilize a Bridge Management System to manage their bridge assets.

9. Sufficiency Rating and the Need for a New Performance Rating Measure

- The 30+-year-old Sufficiency Rating (SR) formula should be reviewed.
 - The relative influence of bridge functionality versus condition needs to be assessed.
 - Scour assessment and seismic vulnerability, two leading causes for loss of bridges, are not components of the SR.
 - SR does not address rideability (smoothness) of decks, a factor important to our users.
 - SR could better address the network priority of the routes the bridge serves. For example, PENNDOT uses 4 networks for internal planning purposes:
 1. NHS Interstates + Ramps
 2. Other NHS Routes
 3. Non-NHS routes with ADT > 2,000 vpd
 4. Other Non-NHS routes

- The eligibility of individual bridge projects for HBRR funding is now predicated on components of SR. This generally works well when authorizing the scope of work at the individual bridge level. If the SR is low, the bridge needs work.
- The SR does not work as well as a planning tool to determine nationwide allocation of HBRR funds. Many bridges with low SRs are not scheduled for improvement because of the lesser demands of the network they serve. Thus, the statewide SR average can be artificially low if it has many of these low priority bridges.
- A new bridge performance measures(s) is recommended to mitigate the deficiencies noted in SR.
- The SR should be continued as a gage to the new performance measure.

10. NBI Appraisal Item 69 Underclearances, Vertical and Horizontal

- This should be separated into 2 separate NBI appraisal items, one for vertical clearance and one for horizontal.

11. NBI Appraisal Item 68 Deck Geometry

- Revise Item 68 because current ratings do not account for odd number of lanes or for partial and full-length turning lanes on the bridge that improve the functionality of the bridge for specific traffic requirements at the site.

Thank you for the opportunity to comment on these Dockets.

Sincerely yours,

/s/ DAS for GLH

Gary L. Hoffman, P.E.
Chief Engineer

